Paper No. 33

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

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Ex parte ERI MURATA

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Appeal No. 1999-2051
Application No. 08/716,615

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HEARD: OCTOBER 9, 2001

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Before HAIRSTON, KRASS, and BLANKENSHIP, Administrative Patent Judges.

BLANKENSHIP, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 1-7, which are all the claims in the application.

We reverse.

BACKGROUND

The invention is directed to a moving picture coding system. Representative claim 1 is reproduced below.

> 1. A moving picture coding system which includes a quantizer for quantization processing, comprising:
>
> generated bit amount calculation means for calculating a generated bit amount for each coded frame;
>
> quantization variation value calculation means for calculating a quantization variation value, which is a variation of a quantization step size from a previous frame to a current frame, in accordance with a difference in the generated bit amount between two most recently coded frames;
>
> variation value correction frame determination means for determining a frame as a frame for which correction of the quantization variation value should be performed when the frame involves a large amount of motion and the quantization variation value is positive in sign or when the frame involves a small amount of motion and the quantization variation value is negative in sign;
>
> variation value correction means for correcting, for said frame determined as the frame for which correction should be performed, the quantization variation value calculated by said quantization variation value calculation means so as to increase an absolute value of the quantization variation value; and
>
> quantization determination means for adding the quantization variation value corrected by said variation value correction means to a quantization step size of the previous frame to calculate a new quantization step size for the current frame.

The examiner relies on the following reference:

Gonzales et al. (Gonzales)	5,231,484	Jul. 27, 1993

Claims 1-7 stand rejected under 35 U.S.C. § 102 as being anticipated by Gonzales.

We refer to the Final Rejection (mailed Nov. 12, 1997) and the Examiner's Answer (mailed Dec. 7, 1998) for a statement of the examiner's position and to the Brief (filed Sep. 14, 1998) and the Reply Brief (filed Feb. 8, 1999) for appellant's position with respect to the claims which stand rejected.

OPINION

In response to the section 102 rejection, appellant argues, inter alia, that a "variation value correction frame determination means" as set forth in instant claim 1 is not disclosed by Gonzales. The examiner, in the Answer, refers back to the rejection mailed May 27, 1997 for the statement of the rejection. For the "variation value correction frame determination means" set forth in instant claim 1, the examiner refers to column 17, lines 5 through 53 of Gonzales.

The selected portion of Gonzales describes determination of total difficulty factor, D_K, for three types of pictures. Gonzales, at column 3, lines 37 through 51 describes the three types of pictures, as defined by the respective compression method used, that may appear within a group of pictures (GOP). I-pictures are compressed independently of any other picture, and any group of pictures must start with an I-picture. P-pictures are predictively motion compensated, and B-pictures are bidirectionally motion-compensated pictures.

Coding difficulty factors (D_K), as described at, for example, column 11, lines 54 through 60 of Gonzales, are passed to the Picture Bit Allocation subsystem 2 (Fig. 6) prior to the coding of the picture. The Picture Bit Allocation subsystem determines how many bits to allocate to a picture.

The column 17 section pointed out by the examiner also describes determination of "m(r,c)," which refers to the coding mode that will be used for each megablock (MB) in a picture. See Gonzales at col. 15, l. 39-42. According to column 17, lines 31 through 46 of the reference, the coding mode is selected in view of the value of $)(r,c)$, which is a "spatial complexity measure" defined at column 16, lines 45 through 55 of Gonzales. For P-pictures, the "spatial complexity measure" is compared with the value of the forward interpolative motion compensation error $)_{mc,f}(r,c)$; see id. at col. 16, l. 30-33.

Instant claim 1, however, requires that the "variation value correction frame determination means" determines that the quantization variation value of a frame should be corrected "when the frame involves a large amount of motion and the quantization variation value is positive in sign or when the frame involves a small amount of motion and the quantization variation value is negative in sign" (emphasis added). As represented by the information flow and boxes 2, 3, and 6 of instant Figure 1, two different conditions are examined: (1) the amount of motion associated with a frame; and (2) the arithmetic sign of the quantization variation value.

The examiner has not shown how the specific requirements of claim 1 are met by the reference. We note that the test for anticipation is narrow, and further note that claim 1 is drafted in "means plus function" format.

> Anticipation is established only when a single prior art reference discloses, expressly or under principles of inherency, each and every element of a claimed invention. Furthermore, with an element expressed in terms of a means plus function, "absent structure [in a prior art reference] which is capable of performing the functional limitation of the 'means,' [the prior art reference] does not meet the claim."

RCA Corp. v. Applied Digital Data Sys., Inc., 730 F.2d 1440, 1444, 221 USPQ 385, 388 (Fed. Cir. 1984) (citations omitted).

Thus, even if the examiner might deem the reference to disclose something that could be considered a "variation value correction frame determination means," the law of anticipation requires that the reference also associates the identical functions required by claim 1 with that "means." A corollary to this rule is that there may be structural equivalents as contemplated by 35 U.S.C. § 112, sixth paragraph, different from the disclosed structures corresponding to the claimed "means," that may fall within the requirements of anticipation under 35 U.S.C. § 102. However, any "equivalents" must perform the identical function required by the claim, even though the structure associated with that function may be different from the corresponding structure disclosed by the applicant.

We therefore cannot sustain the rejection of claim 1 under 35 U.S.C. § 102, nor of claims 2 and 3 depending therefrom. Instant claim 4, although in language of different

scope from claim 1, requires a function associated with the "quantization step size variation determiner" that the rejection fails to show in the reference. In particular, claim 4 sets forth the limitation that the quantization step size variation is modified to be "(i) larger if said quantization step size variation is positive and a large amount of motion is determined between a previous frame and a current frame and (ii) smaller if said quantization step size variation is negative and a small amount of motion is determined between the previous frame and the current frame." We do not find any disclosure of these operations in the reference, and the examiner has not pointed out where the description might lie. We therefore cannot sustain the section 102 rejection of claim 4, nor of claims 5 through 7 depending therefrom.

CONCLUSION

The section 102 rejection of claims 1-7 is not sustained.

REVERSED

KENNETH W. HAIRSTON Administrative Patent Judge	)
ERROL A. KRASS Administrative Patent Judge	) BOARD OF PATENT) APPEALS) AND) INTERFERENCES
HOWARD B. BLANKENSHIP Administrative Patent Judge	)

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